Document 19, Jan Nissl, Boise, ID
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HLW & FD EIS PROJECT - AR/PF
Control # DC-19

HLW EIS Web Comments

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From: HLWFDEIS Web Site
Sent: Monday, February 14, 2000 9:12 AM
To: web@jason.com
Cc: web_archive@jason.com
Subject: HLW EIS Web Comment

Name: Jan Nissl
Affiliation:
Address1: 1115 E. State
Address2:
City, State Zip. Boise, Id 83712
Telephone: 208-384-9139
Date Entered: {ts '2000-02-14 09:11:47'}
Comment:

19-1 II.A(5) Treatment should proceed strictly out of concern for environmental protection.
Don't use unproven technology.
"Separations" presents three major problems:

19-2 III.D.3(1)
a. Creates more waste streams to manage
b. Produces greater waste volumes compared to non-separations
c. Poses tremendous technical uncertainties. These technologies have never been demonstrated to work on an industrial scale.

19-3 II.A(1) Treat the calcine and liquid wastes independently. These wastes have different properties and therefore require different approaches. This was also recommended in a recent report from the National Academy of Sciences.

19-4 VII.B(1) Coordinate treatment so as to address all forms of contamination such as groundwater, soil, facilities and the High-level waste.

thank you

Document 20, Donald W. Rhodes, Idaho Falls, ID
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HLW & FD EIS PROJECT - AR/PF
Control # DC-20

RECEIVED FEB 14 2000

Idaho Falls, Idaho
February 10, 2000

Mr. Thomas L. Wichmann
U.S. Dept.of Energy
Idaho Falls, Idaho 83401

Dear Mr Wichmann:

I am sending you my comments on the High Level Waste Treatment options that appeared in the Post Register recently. My comments are of a technical nature based on my many years experience at the Chemical Processing Plant, where I was in charge of developing the chemistry for the calcination process for many years as well as other related waste treatment processes. These comments are not presented in any logical sequence, but are given as they occur to me while preparing this letter.

20-1 III.D.3(1) 1. Dissolving the calcine seems to me to border on the ridiculous. Many millions of dollars and thousands of man hours were spent converting the high level waste to the present granular form. I believe that both Hanford and Savannah River would be very happy to have their high level waste in such an innocuos form. In actual practice, dissolving the calcine is not an easy task. Even the calcine from the aluminum nitrate waste would require some sort of fusion process to dissolve the alpha alumiina that is small in total amount, but is distributed throught the calcine. Extraacting the radionuclides from the liquid after dissolution is not a simple process. Many attempts were made to do this before the waste was calcined, with little success. The end result was a number of wastes, large in volume and containing different levels of radionuclides that would require further treatment for disposal.

20-2 III.D.2.c(3) 2. Although a glass prepared from the calcine is probably a desirable product, converting the calcine to a glass is quite difficult. The process requires very high temperatures, and is dependent on the chemical composition of the calcine. The CPP has four different types of calcine: (1) calcine from calcination of aluminum nitrate waste, (2) calcine from the calcination of ammonium nitrate waste, (3) calcine from the calcination of zirconium fluoride waste, and (4) some calcine from the calcination of intermediate or second cycle waste. I don't believe that records can clearly separate these wastes as to location in the bins. Each of these wastes would probably require some modification for any solidification process that was used. In terms of the contained radionuclides in the waste, the Ru-106, Ce-144, and Zr-Nb-95 would probably be largely decayed.
The Sr-90 would still be there, but would probably not cause a migration problem during the glassification process. The Cs-137, on the other hand, would largely be released and have to be collected during the glassification process. In fact, migration of Cs-137 has been occurring during storage in the bins because of the heat generated by the decay of fission products. In addition to these problems, the energy requirements for glasification will be very high, and the materials of construction that will be needed for the equipment to do the glassification will be very espensive.

20-3 III.D.4(1) 3. There is another potential process to immobilize and protect the calcine, that was not included in the options, that I believe could be used. It would be much less costly than any of the other